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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------------------|-----------------------------|
| 10/607,045 | 06/27/2003 | Ryuzo Okada | 238395US2RD | 6417 |
| 22850 7590 07/11/2007 OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | | |
| | | | EXAMINER SENF, BEHROOZ M | |
| | | | ART UNIT 2621 | PAPER NUMBER |
| | | | NOTIFICATION DATE 07/11/2007 | DELIVERY MODE ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/607,045

Applicant(s)

OKADA ET AL.

Examiner

Behrooz Senfi

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's arguments filed 04/04/2007 have been fully considered but they are not persuasive.

Response to remarks:

Applicant mainly argues (remarks; filed 04/04/2007, page 3, lines 12 – 18 and similarly page 4) that Yoshioka fails to teach or suggest, an image processing apparatus that includes a tracking unit configured to detect a straight line component in a specific direction and to use the tracking result of three or more obstacle candidate area to determine whether the plural obstacle candidate areas belong to a specific plane and to detect an obstacle based on the determination.

Examiner respectfully disagrees; Yoshioka as shown in figs 17 and 18, teaches an image processing for detecting the obstacle, which includes tracking unit (e.g. camera) configured to detect the straight line (e.g. line segment, as shown in figs. 16 and 18) in a specific direction and figs 14(a) – 14(b) clearly shows three obstacle candidate area for detection of the obstacle based on the judging a rank of danger of each of the obstacles with respect to the specific zone (e.g. plane), (please see; figs. 1 and 14 – 18, col. 1, lines 55 – 65). In view of the above claims 1 – 20 are finally rejected for the same reason as set fourth in the last Office Action, mailed 12/05/2006. the rejections are being restated for applicant convenience.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 - 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshioka et al (US 5,461,357).

Regarding claims 1 and 17, Yoshioka '357 discloses, an image processing apparatus (i.e. fig. 1) comprising: means for inputting a plurality of frame images serving as video images (fig. 17, camera 28); means for detecting, from each frame image in the plurality of frame images, a straight-line component in a specific direction (figs. 16 – 18); means for generating an obstacle candidate area as an image area in a vicinity of the detected straight-line component (figs. 17 – 18); means for tracking the obstacle candidate area in an image succeeding each frame image in the plurality of frame images (figs. 16 – 18, abstract, lines 1 – 4, col. 1, lines 38 – 47), and producing a tracking result for the obstacle candidate area and determining, using the tracking result of three or more obstacle candidate areas, whether the three or more obstacle candidate areas belong to a specific plane and producing a determination result (figs. 14 and 18, wherein the obstacles are being track in different zones/areas, cols. 1 – 2, lines 59 – 34) and means for detecting an obstacle based on the determination result (cols. 3 – 4, lines 61 – 10).

Regarding claims 2 – 3 and 18 - 19, Yoshioka '357 discloses, wherein the means for detecting, from each frame image in the plurality of frame images, detects a straight-line component in the horizontal direction (figs. 16 – 18).

Regarding claims 4 and 20, Yoshioka '357 discloses, wherein the means for tracking includes: means for setting an image area in a vicinity of the detected straight-line component as a search area for the obstacle candidate area (the image taking by the camera in figs 16 – 18) and means for tracking the obstacle candidate area (fig. 14, is the zones S1 – S3) by comparing an image feature in the obstacle candidate area (S1 – S3) with an image feature in the search area (search area is the area determining section of the image, where the judgment and tracking of whether or not the obstacle belongs to the small zone is based on comparison of the parameters, fig. 6, col. 5, lines 45 – 63).

Regarding claim 6, Yoshioka '357 discloses, means for selecting a candidate area group consisting of three or more obstacle candidate areas (fig. 14, is the zones S1 – S3) and computing a fitness between the candidate area group (i.e. obstacle area) and a predetermined plane (i.e. area determination section for determining the detection area) and evaluating whether the candidate area group belongs to the predetermined plane based on the fitness (i.e. the judgment as to which split zone the obstacle belongs to among a plurality of zones, col. 5, lines 60 – col. 6, lines 17).

Regarding claim 7, Yoshioka '357 discloses, wherein means for detecting an obstacle detects when a number of obstacle candidate areas that are determined by

the means for determining not to belong to the specific plane is greater than a predetermined number (col. 5, lines 45 – 64).

Regarding claim 5, Yoshioka '357 discloses, wherein the means for tracking eliminates the obstacle candidate area when a trajectory of the obstacle candidate area tracked over the plurality of frame images is not smooth (figs. 17 – 18, col. 9, lines 39 – 60).

Regarding claim 8, Yoshioka '357 discloses, means for estimating a position of the obstacle in a frame image based on a motion of the three or more obstacle candidate areas (col. 4, lines 1 – 10, col. 6, lines 55 – col. 7, lines 42).

Regarding claim 9, the limitations claimed are substantially similar to claim 1 above, therefore the ground for rejecting claim 1 also applies here.

Regarding claims 10 – 16, the limitations claimed have been analyzed and rejected with respect to claims 2 - 8 above.

Contact

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Behrooz Senfi** whose telephone number is **(571) 272-7339**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mehrdad Dastouri** can be reached on **(571) 272-7418**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

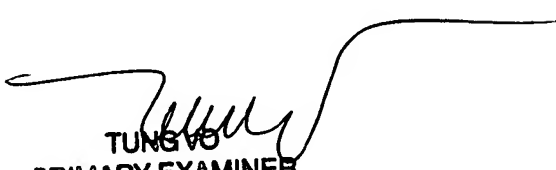
Or faxed to:

(571) 273-8300

Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street, Alexandria, Va. 22314.

Any inquiry of a general nature or relative to the status of the application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is **(571) 272-6000**.

B. M. S.


TUNG VO
PRIMARY EXAMINER